We claim:

1. A method for ascertaining the rotational speed of an internal combustion engine, comprising the steps of:

a) scanning a sector wheel which is driven by the internal combustion engine,

b) detecting a pass of a specific segment of the sector wheel and measuring the duration of this segment pass and ascertaining a rotational speed value therefrom,

c) detecting a pass of a specific part of the segment repeatedly and measuring the duration of this part-segment pass and determining a relative variation of the duration of the part-segment pass between two consecutive passes of the specific part of the segment, and

d) using the relative variation to correct the rotational speed value.

2. The method as claimed in Claim 1, wherein the rotational speed of a multi-cylinder internal combustion engine is ascertained and a step c) is executed for four different part segments, wherein each part-segment coincides with a working stroke of a different cylinder.

3. The method in Claim 1, wherein the relative variation is associated multiplicatively with the rotational speed value.

4. The method as claimed in Claim 2, wherein

- step b) is executed repeatedly and a rotational speed value relationship is formed between two consecutively ascertained rotational speed values,
- the relative variation is determined per individual cylinder,
- a cylinder-specific correction factor is calculated by dividing the relative variation by the rotational speed ratio relationship, and

- the cylinder-specific correction factor is associated multiplicatively in step d) with the rotational speed value.

5. The method as claimed in Claim 4, wherein the cylinder-specific correction factor is low-pass filtered.

6. The method as claimed in Claim 1, wherein the relative variation is low-pass filtered.

7. A method for ascertaining the rotational speed of an internal combustion engine, comprising the steps of:

a) scanning a sector wheel which is driven by the internal combustion engine,

b) measuring a pass of a specific segment of the sector wheel and evaluating a rotational speed value therefrom,

c) measuring a pass of a specific part of the segment repeatedly and determining a relative variation of the duration of the part-segment pass between two consecutive passes of the specific part of the segment, and

d) using the relative variation to correct the rotational speed value.

8. The method as claimed in Claim 7, wherein the rotational speed of a multi-cylinder internal combustion engine is ascertained and a step c) is executed for four different part segments, wherein each part-segment coincides with a working stroke of a different cylinder.

9. The method in Claim 7, wherein the relative variation is associated multiplicatively with the rotational speed value.

10. The method as claimed in Claim 8, wherein

- step b) is executed repeatedly and a rotational speed value relationship is formed between two consecutively evaluated rotational speed values,
- the relative variation is determined per individual cylinder,
- a cylinder-specific correction factor is calculated by dividing the relative variation by the rotational speed ratio relationship, and
- the cylinder-specific correction factor is associated multiplicatively in step d) with the rotational speed value.

11. The method as claimed in Claim 10, wherein the cylinder-specific correction factor is low-pass filtered.

12. The method as claimed in Claim 7, wherein the relative variation is low-pass filtered.

13. A arrangement for ascertaining the rotational speed of an internal combustion engine, comprising:

- a sensor for scanning a sector wheel which is driven by the internal combustion engine,
- means for detecting a pass of a specific segment of the sector wheel and measuring the duration of this segment pass and ascertaining a rotational speed value therefrom,
- means for detecting a pass of a specific part of the segment repeatedly, measuring the duration of this part-segment pass, and determining a relative variation of the duration of the part-segment pass between two consecutive passes of the specific part of the segment, and
- means for using the relative variation to correct the rotational speed value.

14. The arrangement as claimed in Claim 13, wherein the internal combustion engine is a multi-cylinder internal combustion engine and the means for detecting, measuring and determining operate for four different part segments, wherein each part-segment coincides with a working stroke of a different cylinder.

15. The arrangement in Claim 13, wherein the relative variation is associated multiplicatively with the rotational speed value.

16. The arrangement as claimed in Claim 14, wherein the means for detecting and measuring operate repeatedly to determine a rotational speed value relationship between two consecutively ascertained rotational speed values, whereby the relative variation is determined per individual cylinder, the means for detecting, measuring and determining are operable to calculate a cylinder-specific correction factor by dividing the relative variation by the rotational speed ratio relationship, and the means for using

are operable to associate the cylinder-specific correction factor multiplicatively with the rotational speed value.

17. The arrangement as claimed in Claim 16, comprising a low-pass filter for filtering the cylinder-specific correction factor.

18. The arrangement as claimed in Claim 13, comprising a low-pass filter for filtering the relative variation.

19. The arrangement as claimed in Claim 13, wherein the means for detecting and measuring and the means for using are formed by a microprocessor.

20. The arrangement as claimed in Claim 13, wherein the means for detecting, measuring and determining are formed by a microprocessor.